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Socio-Cultural Dimension of Innovation

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Abstract

Determined by many factors such as existing cultural conditions, education, and aesthetics innovation capacity is one of the critical dimensions for economic development. Therefore, by analyzing the factors that promote or constrain the innovation capacity of a society could benefit the economic and social welfare. For the very reason, in this paper, we tried to assess the role of culture in determining innovation capacity of a society, since it is believed that the culture is matter in terms of improving the innovation capacity of a society. For this purpose, we employed Hofstede Index, which is used to measure cultural differences across countries to explore the relationships between culture and innovation. Moreover, inasmuch as innovation capacity is crucial for economic development, we need to consider these questions: could we improve the innovational capacity of a society? If yes, what are the strategies or methods to do it? Although formation of a culture supporting creativity or learning to be creative is tough issue, many scholars claim that it could be learned by following some strategies. Therefore, one may conclude that creativity is a skill that can be developed and a process that can be managed.

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Keywords: Creativity, Innovation, Culture, Hofstede Index

1. Introduction

Especially after the global financial crises firstly emerged in US in 2008, efforts for enhancing the sustainable growth in the world have increased. Therefore, as a part of the solution, some scholars point out the importance of innovation, which involves the creation, and diffusion of new products, processes, and methods to trigger growth in the economies. For instance, China as of now, which recently passed the EU in terms of GDP is the second largest funder of R&D behind the Unites States, which is the first country in terms of GDP in the world. Taking into account the positive correlation between innovational capacities of countries and their GDP, doubtless, current economic positon of Chine in the world seems not a coincidence.

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Now that the innovational capacity in an economy is a significant aspect, it is necessary to assess the determinants of innovational capacity in a society and the ways to improve this capacity. Even though there is a wide range of aspects effecting innovational capacity of a society, in this paper, we will try to analyze the role of culture, which is considered one of the fundamental determinants of innovational capacity in the society by employing the Hofstede index.

It seems that the cultural conditions may set back development of innovational capacity in the society. Therefore, the critical question here is if it is possible to change current culture in a society towards innovation friendly. Hence, the role of the governments may be to remove the obstacles for increasing the innovational capacity of a society. For better innovation policies, OECD states that there must be a necessary educational environment for skilled workforce, and a business environment encouraging investment in technology and in knowledge-based capital, a strong and efficient system for knowledge creation and diffusion and finally policies that encourage firms to engage in innovation and entrepreneurial activity. (OECD, 2015)

In this paper, first we will present some information about culture, innovation, and creativity, and the relations between these terms. Then we will employ the Hofstede index to assess the relationship between culture and innovation. The last but not the least, we will touch whether it is possible to create culture for improving innovational capacity of a society.

2. Creativity, Culture, and Innovation

- *Creativity*

Although there are many different definitions corresponding with "creativity", it seems that the simplest one to recall easily is that the creativity is the act of turning new and imaginative ideas into reality. That is, creativity is not only to adopt the ideas but also to generate new ideas.

- *Culture*

Although many things have impact on generating new ideas, the culture in that society is one of the most important ones in terms of innovation capacity of the society, since it may encourage new ideas to be formed or discourages or may not any impact on formation of the innovation capacity of the society. Accordingly, before assessing the relations between culture and innovation, it is critical to define the term "culture."

Even though there is no agreed definition for this term, one may define culture as a body of a shared knowledge, understanding, and practice in a society. According to the Merriam Webster (2013) dictionary, culture is "the integrated pattern of human knowledge, belief, and behaviour, that depends on the capacity for learning and transmitting knowledge to succeeding generations" and "the customary beliefs, social norms, and material traits of a racial, religious, or social group; and the set of shared attitudes, values, and practices that characterized by institutions or organization."

- *Innovation*

Even though it seems that creativity and innovation are two adjacents, they are separate research fields in terms of several aspects. For instance, the first is mostly dealt with by psychologists, the second mainly by economists and while creativity has been exist through the history of human civilization; we may claim that technological innovation is the recent result of the industrial revolutions. (Legrenzi, 2015)

Schumpeter has defined the innovation basically as "combination of development changes". Therefore, we may generally define innovation as the ability to find new knowledge or a way, see the possibilities of useful changes. Accordingly, considering the definitions for innovation in the literature we may conclude that the general features of innovation are application of new ideas, change, improvement and invention.

2.1. What is the Difference between Invention and Innovation?

Considered abovementioned features of innovation, we need to clarify the distinction between innovation and invention. While innovation is more than an original idea, that is, new ideas must be implemented successfully on the market or that things will be implemented in new ways, essence of invention lies in the diversity of thinking in which personality focuses on expanding and finding new and appropriate solutions to problems and opportunities of various logical alternatives. The creative potential is the sum of knowledge, skills, abilities, and motivation, personal and moral qualities, which are involved, in the creative process. (Fernandez, 2015) Hawkins (2010) describes the difference between creativity and innovation as; creativity is internal, personal and subjective unlike to innovation, which explains as objective and external. In another word, creativity is able to manage innovation but vice versa does not work. In addition, the following statement by Jonathan Ive, Head of Design of Apple Computer Inc., to understand and clarify the difference between invention and innovation is highly striking:

"It is very easy to be different but very difficult to be better."

2.2. The Relation between Culture and Creativity so does the Innovation Capacity of a Society

Various studies have attempted to reveal the linkage between culture and economic outcomes over the last two decades (Guiso, Sapienza, Zingales, 2005; Algan and Cahuc 2006; Guilliano 2007; Greif 2006). Most of them have agreed that culture somehow matters in determining the economic development of a country. Gerard and Grodnichenko (2010) found that there is a strong correlation between culture and long-run growth rates. According to the results of the study, while collectivism leads to relatively static efficiency gains, individualism leads to dynamic innovation effects. They argue that institutions play a significant role in stimulating innovation and hence, long-run economic growth, and that, culture affects not only social norms but also economic behavior such as propensity to save or to innovate. Additionally, they look at individualism, using the Hofstede index as a proxy. While not every country fits the model, the U.S., Australia and the E.U have a higher index, and corresponding higher economic growth; Turkey and Middle East countries have lower index values and growth rate. Another way that culture is transmitted, through attitudes, is from parents to children. Alesina and Guiliano (2009) demonstrated that cultural proxy has explanatory power for in-country variation in political attitudes among individuals from different countries of ancestry.

As for the some characteristic of culture, we may conclude that it is learned, shared, and transmitted from one generation to the next; and can be passed from parents to children, by social organizations, special interest groups, the government, schools, and church; and it is multidimensional, consisting of a number of common elements that are interdependent.

With reference to components in forming of a culture in a society, there exists a great deal of components including historical experiences, religion, social institutions, aesthetics as well as the global geography. In fact, historical experiences have important impacts on both an individual's and a society's beliefs and preferences. As shown by Alesinia and Fuchs-Schundeln (2007), for example, communism, as a historical experience, had a significant impact on the beliefs of the people who lived under it. According to their study, the individuals who lived in East Germany prior to reunification are more likely to favor government provision. Furthermore, Weber (1930, 1951) argued that the development of capitalism stem from the protestant ethics in the West, which allowed protestants to develop the idea of pure business relationship. Greif (2006) emphasizes that different structure of the cultures lead to different kinds of institutions, as in the case of the Maghreb traders and the Genoese, and how institutions form the subsequent development path of these societies. While human capital is a well-known determinant of growth and development, according to a working paper by the Leibniz Information Center, early political institutions are the main reason for current economic performance differences of regions in Europa. Accordingly, they conclude that historical institutions have shaped the culture, and that culture is one of the main determinants of economic development.

When we look at these components closely, we see that all of them are related the existing culture in the society. Herbig and Dunphy (1998:14) "existing cultural conditions determine whether, when, how and in what a new innovation forms will be adopted. If the behavior, ideas and material apparatus which must accompany the use of innovation can affect improvements along lines already laid down in the culture, the possibilities of acceptance are much greater." Accordingly, culture really matters in terms of promoting innovation capacity of a society.

3. Measuring the Role of Culture: Hofstede Index

Hofstede (1980) describes results of a research project carried out between 1967 and 1973. Hofstede's "dimensions of culture" model emerged from this research and later studies contributed to development of this idea. Cultural dimensions model provides a systematic framework for assessing the differences between nations and cultures. There are six indices in this theory, which are power distance, individualism, uncertainty avoidance, masculinity, long-term orientation, and indulgence.

Power Distance Index is defined as "the extent to which the less powerful members of organizations and institutions likely to submit to authority and accept and expect that power is distributed unequally" (Hofstede, 1994, p. 28).

Individualism is giving more importance to needs of individuals than needs of group or organization. Individualistic societies value personal goals, whereas collectivist societies value goals of the group.

Masculinity focuses on the degree to which masculine values like competitiveness and the acquisition of wealth are valued over feminine values like relationship building and quality of life.

Uncertainty Avoidance measures general tendency of a society's tolerance for ambiguity and their likeliness to avoid such situations.

Long-Term Orientation focuses on the degree the society's attitude towards traditional values. Long-term oriented cultures aim for the future. For short-term oriented cultures present is more important than future and they live on their daily routine by following their traditions.

A sixth dimension named *Indulgence* was added to the model in 2010. This dimension measures people's tendency to control their behaviours and attitudes. Relatively weak control is called indulgence and relatively strong control is called restraint. In some studies (Rao B.J., Sermet A., Mijatovic D., 2003) and Kaasa A., Vadi M., 2008) it is concluded that there is a negative relationship between innovation and power distance, individualism, masculinity and uncertainty avoidance. A country needs to have lower than average of these dimensions in order to get more innovative results. Included be below are several properties regarding the cultural dimensions: Power distance has strong negative relation with individualism. Power distance has a less strong positive relation to uncertainty avoidance. Masculinity has no relation to the first three dimensions. For a country, to have a more efficient and effective innovation based on cultural dimension, lower power distance and uncertainty avoidance is needed. Moderate levels of individualism and masculinity could be accepted for achieving this purpose.

3.1. Examples from Different Countries

If we look at Turkish culture from the perspective of the cultural dimension model, we can say that the results comply with our general knowledge about the Turkish society.

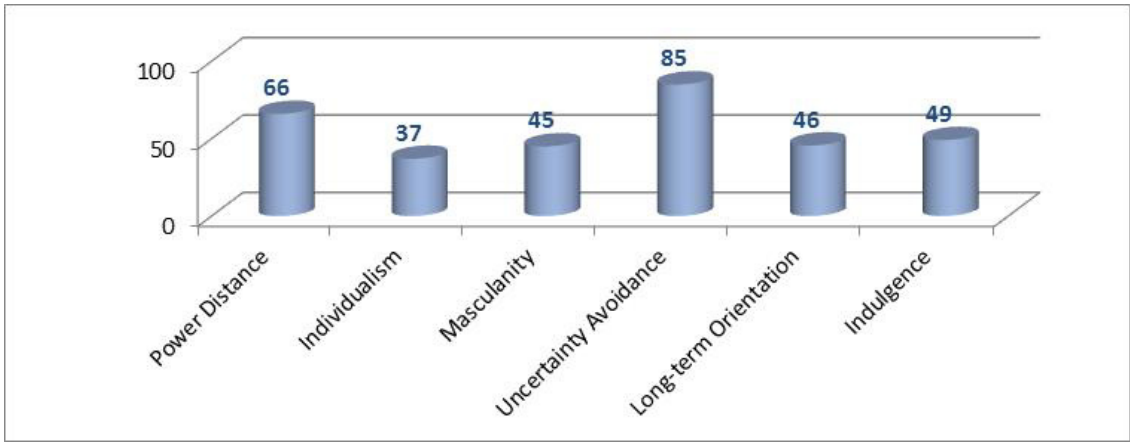

Figure 1- Turkey's Scores on Cultural Dimension Model
Source: http://geert-hofstede.com/

Power distance: A high score on this dimension implies that Turkish people are dependent, such as in their relationships with their bosses. Power is centralized and rules and authority are unavoidable life facts. People tend to take less initiative and do what they are told to do. So, leaders resolve problems and make difficult decisions.

Individualism: Turkey's low score on this dimension tells us collectivism is dominant in the society. This shows us that people look after each other and care for their families, groups and organizations. People internalize group interests more, so that they avoid having conflicts with each other inside a group and try to save the harmony. Eventually, a relationship of trust rises among the group members.

Uncertainty avoidance: Turkey's considerably high score on this dimension tells us that the people in people are uncomfortable with ambiguity and need rules and laws. They are more likely to avoid risks and less likely to be entrepreneurs. That's why they demand jobs with less risk to be fired, such as being a public officer. Masculinity, Long Term Orientation and Indulgence scores for Turkey are all in the middle of the scale, so no characteristics regarding to these dimensions can be inferred.

We can compare these Turkey's results with some other countries around the world, which are either developed, or developing. To show how culture contributes to innovation, we share GDP per capita values and global innovation index scores of these countries with their rankings regarding to them.

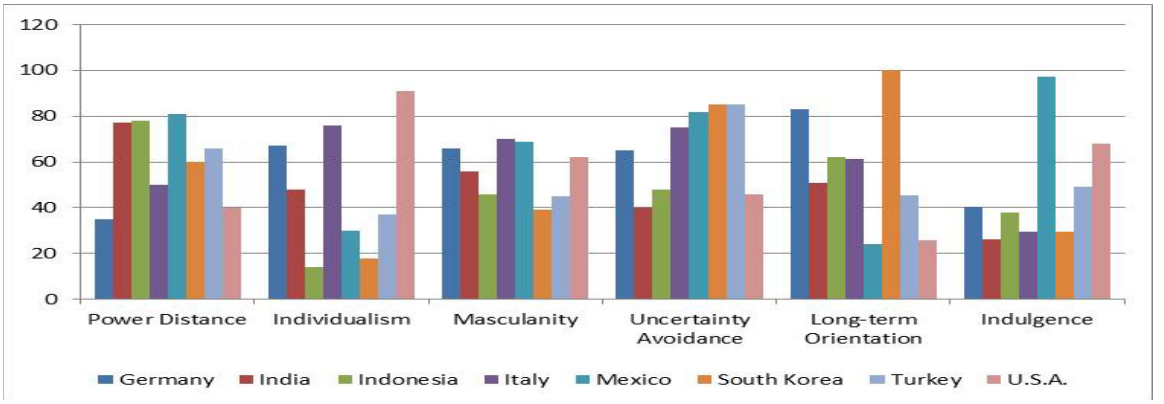

Figure 2 - Comparison of Selected Countries' Scores on Cultural Dimension Model
Source: http://geerthofstede.eu/dimension-data-matrix

USA and Germany have lower power distance level compared to others. For individualism, Germany, Italy and USA have highest three values Masculinity values are close to each other where South Korea has the lowest value. Except for India, uncertainty avoidance is on or above moderate level for each country.

At 100, South Korea scores as one of the most pragmatic, long-term oriented societies. People live their lives guided by virtues and practical good examples. Score of 24 implies that the Mexican culture is normative. They show great respect for traditions, have focused on the present more than the future as they aim for getting results today. The United States scores 26 shows that Americans are prudent as they depend on their insights when they face new information. We can relate this result to Americans' biased attitudes about situations they face, because of their hardly changing beliefs and ideas.

With a very high score of 97, Mexican culture has a definite tendency toward indulgence. This means Mexicans possess a positive attitude and have a tendency towards optimism. In addition, they place a higher degree of importance on leisure time, act as they please and spend money as they wish.

When we compare above cultural dimensions value of selected countries with their respective Global Innovation Index rankings below, we can say that innovation is much more related with power distance than the other dimensions. Of course there are some interactions between these dimensions as these interactions can affect innovation capacity of a society.

On the other hand, these values prove one of our properties regarding the cultural dimensions as we mentioned earlier, such as, we can conclude power distance really does have a strong negative relation with individualism. Whereas, other two properties cannot be concluded as it is not evident.

Gladwell (2011) tells the stories of some outliers in his famous book Outliers. One of the striking success stories mentioned in the book is the story of Bill Gates who is one of the well-known innovators. According to the book, his grandfather was the state legislator and mayor, and his grandmother was the vice president for the national bank. His father was a famous defensive lawyer and his mother was teacher and a chairperson for a charity institution. In the elementary school, he surpassed all of his classmates especially in math and science. He was accepted to Harvard. He was so curious about the computer that he was skipping some classes to spend more time in the lab with his close friend Poul Ellen. However, unfortunately they did not graduate from the school because of their curiosity about computer. They devoted their all time to develop a software for personnel computers. At the end they succeeded. Here the attitudes of his family when they noticed his intelligence are the key point for this success story.

We can look at another example from the history. Some political science scholars try to explain the difference in GDP per capita of the countries with institutions such as culture, religion, and customs. Starting from 1000 to 1700, Islamic countries were the most developed countries in the world thanks to the better trade opportunity. Muslim and Jewish merchants established a system based on trust between traders, which decrease the cost of hiring an agent in

different country. As for the west, since individualism was in the forefront, they had to find a different way to promote trade: Contract enforcement. As a result, some scholars claim that one of the reasons for income difference in GDP per capita between countries is contract enforcement.

We also compared some countries' GDP per capita levels (with current $US values as of 2013) with their innovation levels in the below table. Not surprisingly, we can see from the table that a country's innovation capacity and GDP per capita level is highly correlated. When we order these eight countries according to their GDP per capita ranking and GII ranking, the order is almost the same except for Indonesia, which gets ahead of India in the GDP per capita ranking.

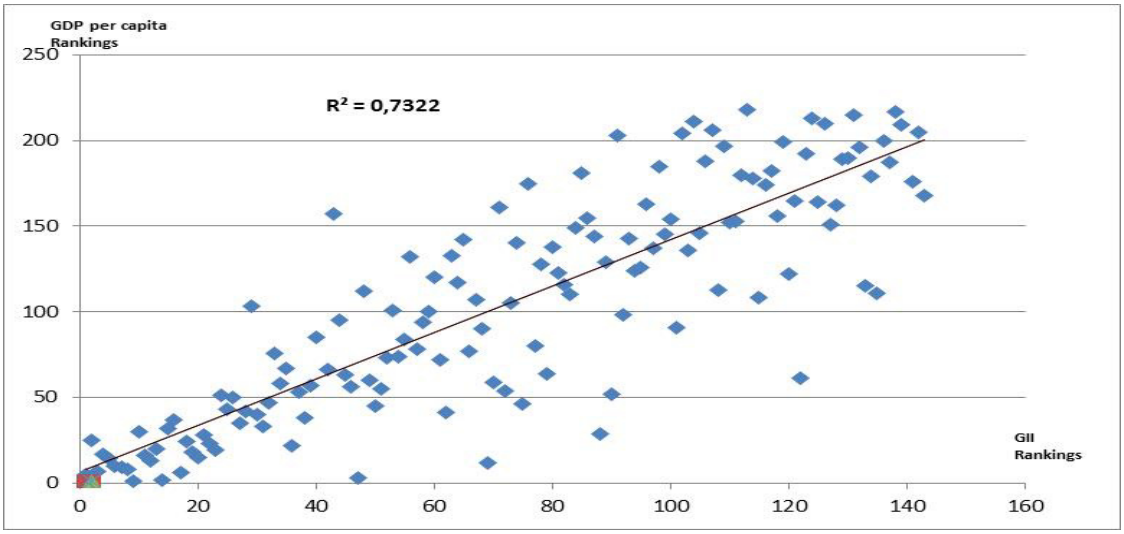

Figure 3 - GDP per capita vs Global Innovation Index Rankings
Sources: The Worldbank Databank, Global Innovation Index

3.2. Creating Culture for Improving Innovational Capacity of a Society

Many studies carried on innovation over the last decade, and each one found its own way to define systematic innovation process and how to manage it. Following these processes can help developing and sharing new ideas more effectively. To do that, many acceptable models helping better innovation processes can be found in the literature. Innovation efforts can begin with setting the conditions and culture for success. In the beginning, building a culture for experimentation and risk-taking is important as the creation of a culture of innovation underlies all other elements of the innovation process.

Culture can help to define the problems or opportunities for innovation. This is about clarifying the purpose of your innovation work and the degree of change that you want to create. You can improve things by changing their nature or make things in a radical way. Your choice and intentions will influence the methods and tools you choose to use. In many ways the innovation is just a kind of learning which repeats continuously.

New technologies allow us to connect with and meet people all around the world, enabling us to access a greater diversity of ideas and thoughts. It makes learning faster, easier and cheaper. These technologies contribute to faster development and systematic innovation processes. (Kasper G., Clohesy S., 2008).

4. Conclusion

In this paper which we assess role of culture in determining the innovation capacity of a society; we employ the Hofstede index to reveal the positive relation between these variables. The GDP level of the countries and their ranking in the index clearly verify that prevailing culture in the society is somehow matter in determining the innovational capacity of that society. In fact, the societies which have higher innovation capacities are characterized by higher individualism, willingness to take risks, readiness to accept change, long-term orientation, low on power/status/hierarchy (low power distance), weak uncertainty avoidance, openness to new information, frequent travel, positive attitude towards science, value of education to society, religion.

Therefore, the efforts to create innovation friendly cultural conditions are really important for the economic development and it may be possible to create this kind of environment by following the necessary steps.

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